S. aureus
- Beta hemolytic
- Coagulase (+)
- Yellow colonies in blood agar (Catalase +)
- **FIRST CAUSE OF GI INTOXICATIONS IN THE U.S. (TOXIN=HEAT STABLE)
- Diseases:
  - **TOXIC SHOCK SYNDROME:** [HIGH YIELD]
    - TOXIN: TSST-1: Act like a Superantigen (Overactivate Immune System)
    - Clinica:Fever, scarlatin rash or sunburn that desquamates palms and soles.
    - Associated with Tampons and wound packing.
    - Questions: Woman who recently had menstruation.
  - **GASTROENTERITIS:** 2-6 HOURS AFTER INGESTING TOXIN
    - TOXIN: ENTEROTOXIN A-E (Heat Stable) Self-limiting
    - Clinica: Nausea, abdominal pain, vomiting and diarrhea.
    - Foods: Potato salad, Pastries, Custard, Canned meats.
  - **INFECTIVE ENDOCARDITIS**
  - **PNEUMONIA:** Salmon color sputum, high rate of necrosis and fatality.
  - **IMPETIGO:** Erythematous papules to bullae.
    - Use Catalase to differentiate between Staph or Strep agent.
  - **OSTEOMYELITIS:** Bone pain and fever (Staph, Most common cause)
  - **SCALDED SKIN SYNDROME:** Diffuse epidermal peeling. Toxin: Skin Exfoliating Toxin(SSS)

S. pyogenes
- Beta hemolytic
- Bacitracin sensitive
- PYR (+). Sirve para diferenciar del Grupo B
- Pathogenesis:
  - M protein: antiphagocytic
  - M12 associated with acute glomerulonephritis
- Spreading Factors:
  - Exotoxins A-C
- Diseases:
  - **SCARLET FEVER:** [HIGH YIELD]
    - "Sandpaper Rash" and "Strawberry Tongue", Blanching
  - PHARYNGITIS
  - IMPETIGO/PIODERMA: Honey Crusted Lesion
  - CELLULITIS/NECROTIZING FASCITIS
    - Sequelae: **HIGH YIELD**
  - **RHEUMATIC FEVER:** Antibodies to heart tissue. Type II
  - **Hypersensitivity**. I ASO Titers
  - **GLomerulonephritis:** M12 Serotype. **Type III Hypersensitivity.**
  - Smoky Urine.
    - Dx: Rapid Strep Test: ELISA
      - Streptolysin O (ASO): Titer > 200 Rheumatic Fever.
  - Treatment:
    - Beta lactam drug
    - Macrolides (Penicilin allergies)

S. epidermidis:
- Coagulase (-) / Novobicin Sensitive
- Infections of Catheters and prosthetic devices/Shunts
- Endocarditis in IV Drug users
- Biofilm producer.

S. saprophyticus:
- Coagulase (-) / Novobicin resistant
- "Honeymoon Cistitis"
- Questions: Young female, sexually active, signs of UTI.

S. agalactiae:
- Beta hemolytic
- Bacitracin resistant/ Hydrolyze hippurate
- Reservoir: Human Vagina 15-20%
- Pathogenesis: Capsule/B hemolysin and cAMP factor(Test)
- Disease: **NEONATAL MENINGITIS AND SEPTICEMIA**
- Treatment: Ampicilin w/ aminoglycoside or cephalosporin.

S. pneumoniae
- Alfa hemolytic
- Optochin sensitive / Lancet shaped
- Reservoir: Human respiratory tract.
- Predisposing factors:
  - Measles or Influenza
  - Alcoholism
  - Aesplenia / CHF/ COPD
- Diseases: **HIGH YIELD**
  - **TYPICAL PNEUMONIA:** Rusty Sputum. **Treatment:** Macrolides
  - **ADULT MENINGITIS:** Ceftriaxone/ Cefotaxime or Macrolides
  - **OTITIS MEDIA-SINUSITIS (CHILDREN):** Amoxicillin
  - Pneumococcus produces a lobar pneumonia w/ productive cough.
  - **VACCINE:** POLISACHARIDES.
  - **ADULTS: PPV >65Y** **CHILDREN: PCV**